

**Amendments to the Claims**

Please add new Claims 20-22. The Claim Listing below will replace all prior versions of the claims in the application:

**Claim Listing:**

1. (Previously presented) A method of polymerizing an aromatic monomer, comprising combining an aromatic monomer with a water soluble hematin catalyst, wherein the hematin catalyst has been derivatized with one or more non-proteinaceous amphipathic groups.
2. (Original) The method of Claim 1, further comprising combining a peroxide initiator with the aromatic monomer and the derivatized hematin.
3. (Original) The method of Claim 2, further comprising a template, wherein the aromatic monomer aligns along said template and polymerizes to form a complex comprising the polymerized aromatic monomer and the template.
4. (Original) The method of Claim 3, wherein the template is a polyelectrolyte.
5. (Original) The method of Claim 4, wherein the polyelectrolyte is polyanionic.
6. (Original) The method of Claim 5, wherein the polyanionic polyelectrolyte is poly(styrene sulfonic acid) or a salt thereof.
7. (Original) The method of Claim 3, wherein the template is optically active.
8. (Original) The method of Claim 7, wherein the optically active template is an oligonucleotide or a polynucleic acid or a salt thereof.
9. (Original) The method of Claim 8, wherein the polynucleic acid is 2'-deoxyribonucleic acid or a salt thereof.

10. (Original) The method of Claim 5, wherein the template is lignin sulfonic acid or a salt thereof.
11. (Original) The method of Claim 5, wherein the template is dodecylbenzene sulfonic acid or a salt thereof.
12. (Original) The method of Claim 3, wherein the aromatic monomer is a substituted or unsubstituted aromatic compound.
13. (Original) The method of Claim 12, wherein the aromatic compound is an aniline.
14. (Original) The method of Claim 13, wherein the aniline is 2-methoxy-5-methylaniline.
15. (Original) The method of Claim 12, wherein the aromatic compound is a phenol.
16. (Original) The method of Claim 13, wherein the complex formed is a water-soluble complex of a polyaniline and the template.
17. (Original) The method of Claim 16, wherein the polyaniline is of the electrically-conducting emeraldine salt form.
18. (Original) The method of Claim 15, wherein the complex formed is a water-soluble complex of polyphenol and the template.
19. (Original) The method of Claim 7, wherein the polymerized aromatic monomer complexed to the template has a macro-asymmetry.
20. (New) The method of Claim 1, wherein the non-proteinaceous amphipathic groups are selected from the group consisting of phosphoglycerides; sphingomyelin; glycolipids; substituted or unsubstituted polyethers; substituted or unsubstituted polyalkylene glycols; substituted or unsubstituted polyamines; polyammonium groups; and polysaccharides.

21. (New) A method of polymerizing an aromatic monomer, comprising combining an aromatic monomer with a water soluble hematin catalyst, wherein the hematin catalyst has been derivatized with one or more non-proteinaceous amphipathic groups, and wherein the derivatized hematin catalyst is soluble in a pH range between about pH 1 and about pH 12.
22. (New) The method of Claim 21, wherein the non-proteinaceous amphipathic groups are selected from the group consisting of phosphoglycerides; sphingomyelin; glycolipids; substituted or unsubstituted polyethers; substituted or unsubstituted polyalkylene glycols; substituted or unsubstituted polyamines; polyammonium groups; and polysaccharides.